



## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2022-1486; Project Identifier AD-2022-01026-T; Amendment 39-22418; AD 2023-08-03]

RIN 2120-AA64

#### Airworthiness Directives; Gulfstream Aerospace Corporation Airplanes

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Gulfstream Aerospace Corporation Model G-1159A and G-1159B airplanes and all Model G-IV and GIV-X airplanes. This AD was prompted by a report that the ground spoiler actuator installation does not preclude improper hydraulic line connections that could result in unintended asymmetrical spoiler deployment. This AD requires incorporating corrective actions that physically prevent improper connection of the hydraulic lines to the ground spoiler actuator. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### ADDRESSES:

*AD Docket:* You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1486; or in person at Docket Operations between 9 a.m. and 5 p.m.,

Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

*Material Incorporated by Reference:*

- For service information identified in this final rule, contact Gulfstream Aerospace Corporation, Technical Publications Dept., P.O. Box 2206, Savannah, GA 31402-2206; telephone 800-810-4853; email [pubs@gulfstream.com](mailto:pubs@gulfstream.com); website [gulfstream.com/en/customer-support/](http://gulfstream.com/en/customer-support/).

- You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at [regulations.gov](http://regulations.gov) under Docket No. FAA-2022-1486.

**FOR FURTHER INFORMATION CONTACT:** Samuel Belete, Aerospace Engineer, Systems and Equipment Section, FAA, Atlanta ACO Branch, 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5580; email: [9-ASO-ATLACO-ADs@faa.gov](mailto:9-ASO-ATLACO-ADs@faa.gov).

**SUPPLEMENTARY INFORMATION:**

**Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Gulfstream Aerospace Corporation Model G-1159A and G-1159B airplanes and all Model G-IV and GIV-X airplanes. The NPRM published in the *Federal Register* on November 25, 2022 (87 FR 72422). The NPRM was prompted by a report, following a fatal accident involving a Gulfstream Model G-IV, that the ground spoiler actuator configuration does not preclude improper hydraulic line connections that could result in unintended asymmetrical spoiler deployment. In the NPRM, the FAA proposed incorporating corrective actions that

physically prevent improper connection of the hydraulic lines to the ground spoiler actuator. The FAA is issuing this AD to address improper connection of the ground spoiler hydraulic lines, which, if not addressed, could result in unintended asymmetrical spoiler deployment leading to loss of control of the airplane.

## **Discussion of Final Airworthiness Directive**

### **Comments**

The FAA received comments from the National Transportation Safety Board (NTSB). The NTSB supported the NPRM without change.

The FAA received comments from Gulfstream Aerospace Corporation. The following presents the comments received on the NPRM and the FAA's response to each comment.

### **Request To Clarify Information in the Preamble**

Gulfstream requested that the FAA revise the description of the incident that prompted the NPRM. Gulfstream requested aligning the SUMMARY with the Background details in the NPRM to state that the proposed AD was prompted by a report that the ground spoiler actuator installation "does not preclude" improper hydraulic line connections, instead of stating that the installation "allows" such improper connections.

The FAA agrees with the suggested revision and has revised the SUMMARY of this final rule accordingly.

### **Request To Clarify the Total Affected Airplanes (Cost of Compliance)**

Gulfstream requested that the FAA revise the Cost of Compliance section of the NPRM to reflect a total population of affected airplanes of 1,045. This includes airplanes of all registries. The "Cost of Compliance" section in the NPRM identified a total of 550 airplanes of U.S. Registry as affected.

The FAA does not agree because the "Cost of Compliance" section accounts for the cost of AD compliance only for affected airplanes that are certificated by the FAA

and included on the U.S. Registry. Airplanes registered in other countries are regulated by their civil aviation authorities, who may or may not adopt similar rulemaking. The FAA has not changed this final rule as a result of this comment.

### **Request To Change Compliance Time**

Gulfstream requested that the FAA change the compliance time for Model G-1159A, G-1159B, and G-IV airplanes from 18 months after the effective date of this AD to 18 months from March 3, 2023. Gulfstream stated that if the AD becomes effective prior to March 3, 2023, it will shorten the FAA and Gulfstream agreed-on corrective action timelines, and would increase an already challenging compliance window.

The FAA finds it unnecessary to change the compliance time. The effective date of this AD is after the requested reference date of March 3, 2023, so this AD will provide the full 18 months for compliance for those airplanes.

### **Additional Change to this Final Rule**

Gulfstream has developed and published service information that will address the unsafe condition for certain airplanes identified in this final rule. This service information is described under “Related Service Information under 1 CFR Part 51” in this final rule. After reviewing this service information, the FAA determined that it is acceptable to use for compliance with the requirements of this AD for the identified airplanes. The FAA has revised the proposed AD to present the requirements for Model G-1159A, G-1159B, and G-IV airplanes in paragraph (g) of this AD, which also identifies this service information as acceptable for compliance with the requirements of the AD for those airplanes. The requirements for Model GIV-X airplanes have not changed, and are restated in new paragraph (h) of this AD. In addition, the Costs of Compliance section has been updated to reflect costs specified in this service information.

## Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

## Related Service Information under 1 CFR Part 51

The FAA reviewed the following service information:

- Gulfstream G300 Customer Bulletin No. 250, dated November 9, 2022
- Gulfstream G400 Customer Bulletin No. 250, dated November 9, 2022
- Gulfstream GII-GIIB Customer Bulletin No. 471, dated November 9, 2022
- Gulfstream GIII Customer Bulletin No. 189, dated November 9, 2022
- Gulfstream GIV Customer Bulletin No. 250, dated November 9, 2022

This service information specifies procedures for replacing the left and right ground spoiler actuator hydraulic hoses and associated fittings. These documents are distinct since they apply to different Model G-1159A, G-1159B, and G-IV airplanes. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

## Costs of Compliance

The FAA estimates that this AD affects 550 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

### Estimated costs for required actions

Labor cost	Parts cost	Cost per product	Cost on U.S. operators
20 work-hours X \$85 per hour = \$1,700	\$500	\$2,200	\$1,210,000

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some or all of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2023-08-03 Gulfstream Aerospace Corporation:** Amendment 39-22418; Docket No. FAA-2022-1486; Project Identifier AD-2022-01026-T.

#### **(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to the Gulfstream Aerospace Corporation airplanes identified in paragraphs (c)(1) through (4) of this AD, certificated in any category.

(1) Model G-1159A airplanes having serial numbers (S/Ns) 385, 387, 388, and 390 through 498 inclusive.

(2) Model G-1159B airplanes having S/Ns 009, 016, 042, 048, 054, 064, 086, 088, 095, 098, 102, 119, 123, 125, 131, 140, 151, 154, 155, 156, 165, 166, 189, 198, 199, 207, 219, 237, 245, 254, 255, and 257.

(3) Model G-IV airplanes, all serial numbers.

(4) Model GIV-X airplanes, all serial numbers.

Note 1 to paragraph (c): Some Model G-IV airplanes are also referred to by the marketing designations G300, G400, and GIV-SP.

Note 2 to paragraph (c): Some Model GIV-X airplanes are also referred to by the marketing designations G350 and G450.

**(d) Subject**

Air Transport Association (ATA) of America Code 27, Flight Controls.

**(e) Unsafe Condition**

This AD was prompted by a report that a Gulfstream Model G-IV airplane was involved in a fatal accident on December 15, 2021, after spoilers deployed in an asymmetrical manner. The asymmetrical spoiler deployment resulted in in-flight loss of control of the airplane. The fatal flight was the first flight after maintenance actions where the spoiler hydraulic lines were improperly connected (reversed) to the ground spoiler actuator. The ground spoiler actuator configuration does not preclude improper hydraulic line connections that could result in unintended asymmetrical spoiler deployment. The FAA is issuing this AD to prevent incorrect connection of the hydraulic lines to the ground spoiler actuator. The unsafe condition, if not addressed, could result in unintended asymmetrical spoiler deployment leading to loss of control of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions: Model G-1159A, G-1159B, G-IV**

For Model G-1159A, G-1159B, and G-IV airplanes: Within 18 months after the effective date of this AD, incorporate corrective actions (includes replacing a ground spoiler actuator hydraulic hose and associated fittings) that physically prevent improper connection of the hydraulic lines to the ground spoiler actuator, in accordance with a method approved by the Manager, Atlanta ACO Branch, FAA. Accomplishment of the

actions specified in the applicable service information in paragraphs (g)(1) through (5) of this AD is acceptable for compliance with the requirements of this paragraph.

(1) Gulfstream G300 Customer Bulletin No. 250, dated November 9, 2022.

(2) Gulfstream G400 Customer Bulletin No. 250, dated November 9, 2022.

(3) Gulfstream GII-GIIB Customer Bulletin No. 471, dated November 9, 2022.

(4) Gulfstream GIII Customer Bulletin No. 189, dated November 9, 2022.

(5) Gulfstream GIV Customer Bulletin No. 250, dated November 9, 2022.

**(h) Required Actions: Model GIV-X**

For Model GIV-X airplanes: Within 60 months after the effective date of this AD, incorporate corrective actions (includes replacing a ground spoiler actuator hydraulic hose and associated fittings) that physically prevent improper connection of the hydraulic lines to the ground spoiler actuator, in accordance with a method approved by the Manager, Atlanta ACO Branch, FAA.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Atlanta ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (i)(3)(i) and (ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

**(j) Related Information**

For more information about this AD, contact Samuel Belete, Aerospace Engineer, Systems and Equipment Section, FAA, Atlanta ACO Branch, 1701 Columbia Avenue, College Park, GA 30337; phone: 404-474-5580; email: 9-ASO-ATLACO-ADs@faa.gov.

**(k) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Gulfstream G300 Customer Bulletin No. 250, dated November 9, 2022.

(ii) Gulfstream G400 Customer Bulletin No. 250, dated November 9, 2022.

(iii) Gulfstream GII-GIIB Customer Bulletin No. 471, dated November 9, 2022.

(iv) Gulfstream GIII Customer Bulletin No. 189, dated November 9, 2022.

(v) Gulfstream GIV Customer Bulletin No. 250, dated November 9, 2022.

(3) For service information identified in this AD, contact Gulfstream Aerospace Corporation, Technical Publications Dept., P.O. Box 2206, Savannah, GA 31402-2206; telephone 800-810-4853; email pubs@gulfstream.com; website [gulfstream.com/en/customer-support/](http://gulfstream.com/en/customer-support/).

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: [www.archives.gov/federal-register/cfr/ibr-locations.html](http://www.archives.gov/federal-register/cfr/ibr-locations.html).

Issued on April 14, 2023.

Christina Underwood, Acting Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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